UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,507	08/27/2001	Won-Keun Kong	Q64305	2898

7590 08/23/2006

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W., Suite 800
Washington, DC 20037-3213

EXAMINER	
NGO, NGUYEN HOANG	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,507	KONG, WON-KEUN	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment of 6/15/2006. All changes made to the Claims have been entered. Accordingly, Claims 1-9 and 14 are currently pending in the application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5, 7, 9, and 10-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kunze et al. (US 6879593), hereinafter referred to as Kunze.

Regarding claim 1, 5, and 9, Kunze discloses a network gateway comprising a computer processor programmed to permit the gateway to communicate with other nodes on the public network and private network (network address conversion system for enabling an access to a node of a private network, having a private IP address and an internal port value, figure 2 and figure 3 and co2 lines 63-37). Kunze further discloses;

of the network gateway processing (computer processor) incoming network packets from the public node (20 of figure 2) which contains a connection request (col3 lines 40) to a fixed subset of nodes on the private network (a reservation unit which receives an access reservation demand (connection request) from an external network node (public node) to access a specific node of the private network (40c of figure 2), col3 lines 54-60).

of responding to the connection request by changing the "source" address to a gateway's public IP network socket and forwarding to the public network socket from which the connection request originated (external port value allocation unit (creating a entry in socket map) which allocates a first external port value (public port number) to the specific node in response to receiving the access reservation demand (connection request) from the external node (public node), and transmitting the first external port value to the external network node (response to request), solid line of figure 1 representing response and 560 of figure 4 and col4 lines 20-25). It should be noted that figure 3 further teaches of having the external port value (public network port number 1626) be different from the internal port value (private network port number 1246 of figure 3).

of a socket map including a public network port number, a private network address, and a private network port number (a mapping table which records a mapping relationship between the first external port value (a public port number) that is allocated and the internal port value (private port value) of the specific node of the private network, col3 lines 9-15).

an address conversion unit which converts the first external port value (public port number) into a private IP address (private network address) of the specific node, when the external network node accesses the specific node by using the first external port value (as seen in figure3).

that an entry is established in the socket map mapping the gateway's public network socket on which the original request packet was received to the private network socket from which the response packet was received (wherein the first external port value (public port) that is allocated to the specific node in response to receiving the access reservation demand (connection request) from the external node (public node) is a new port value (new entry established in socket map) and said new port value is allocated when the access reservation demand is received (connection request received and connection established), col4 lines 34-39 and figure 4).

that a connection is established between the public and private network nodes (wherein the address conversion unit (socket map, figure 3) receives a response packet (connection established thus transferring packets from public node to private node as seen in figure 1) from the external node that includes the new port value and converts the new port value to the internal port value (seen in figure 3) such that the response packet is transmitted to the specific node with the internal port value (communications to private node), col4 lines 38-41 and figure 1 and figure 3). It should be noted that it is well known in the art that once the connection is established between the public and private network nodes, any packets/communication sent between the two nodes will

include a port value/new port value in order to correctly send the packet to the correct destinations (col4 lines 22-25).

Regarding claim 3, 7, and 14 Kunze discloses a mapping table that records the mapping relationship between the first external port value that is allocated (public port value) and the internal port value (private port value) of the specific node of the private network when the access reservation demand is received from the external network node (figure 3 and col4 lines 34-38).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunze et al. (US 6879593), in view of Wootton et al. (US 6128298) hereinafter referred to as Kunze and Wootton.

Regarding claim 2 and 6, Kunze discloses all aspects of the claimed invention as set forth in the rejection of claim 1, but fails to explicitly teach functionality to delete the first external port value from the mapping table in response to the cancel demand. However, Wootton discloses a mapping table (lookup table, col 3 lines 10-15) and the functionality of deleting, when receiving an access reservation cancel demand (zeroing upon detection of an end of transmission code in the packet, col. 3, lines 20-22) the first external port value (lookup table entry, col. 3. line 21, and private network's port number, col. 3, lines 14-15) allocated to the specific node. Therefore, it would have been obvious to one ordinarily skilled in the art at the time of the invention to use the deletion functionality disclosed by Wootton in conjunction with the mapping table of the system disclosed by Kunze to effect efficient use of a network address conversion system's resources. The motivation for doing so would have been when the external node indicates that it no longer desires the connection to the internal node, and the stored information is no longer necessary or relevant, the implementation of the deletion functionality would remove the stored information to allow room in the table for other information.

6. Claims 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunze et al. (US 6879593), in view of Chitturi (US 6760780) hereinafter referred to as Kunze and Chitturi.

Regarding claim 4, and 8 Kunze discloses all aspects of the claimed invention as set forth in the rejection of claim 1, and the public IP address of the external node (as well known in the art, col2 lines 22-30) but does not disclose allocation of a second (or more) port for use by the external node. Chitturi, however, discloses a node on a private network with a private IP address (fig. 2, item 104) and communication between the public node and the private node through a proxy. The communication, which is illustrated by fig. 12 and col. 13, lines 8-12, shows the external node using 2 ports, an audio port 1400 and a video port 1500 which, in this case, is the second port the external network node includes. It would have been obvious to one ordinarily skilled in the art at the time of the invention to include in the functionality of the network address conversion system taught by Kunze with the concept of the external network node having a public IP address and a second external port value as taught by Chitturi. The motivation for doing so would have been to allow the external network node to use two or more ports for communicating with an internal node, as is typically done in modern multimedia communication.

Response to Arguments

7. Applicant's arguments filed 6/15/2006 have been fully considered but they are not persuasive.

8. Applicant submits that the first external port value to the specific node is different from the internal port value of the specific node of the private network. Examiner thus relies on the teaching of figure 3 which shows the external port value (public network port number 1626) be different from the internal port value (private network port number 1246 of figure 3).

9. Applicant further submits that Kunze fails to teach of the first external port value that is allocated to the specific node in response to receiving the access reservation demand from the external node is a new port value and said new port value is allocated when the access reservation demand is received, and the feature of the address conversion unit receives a response packet from the external node that includes the new port value and converts the new port value to the internal port value. Examiner posits it is not unreasonable to interpret the connection establishment as taught by Kunze to include these limitations as discussed in claim 1. Kunze discloses of entering an entry in the socket map thus correlating to allocating a new port value. Kunze further discloses that only when there is a connection request packet (access reservation demand) that a new connection may be established (figure 4), thus correlating to new port value is allocated when the access reservation demand is received. It should be further noted that it is well known in the art that once the connection is established between the public and private network nodes, any packets/communication sent between the two nodes will include a port value/new port value in order to correctly send the packet to the correct destinations (col4 lines 22-25) correlating to receiving a

response packet from the external node that includes the new port value and converts the new port value to the internal port value.

Conclusion

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*** NN.

Nguyen Ngo
United States Patent & Trademark Office
Patent Examiner AU 2663
(571) 272-8398

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER